

These conclusions are based upon careful records, entered every night for more than two months by all members of the party, of everything seen during the day. They show very emphatically that, whereas the distinctive flora of the highly acid but cool Atlantic slope of Nova Scotia has been derived very largely from the now submerged continental shelf and has its affinities far to the south, the distinctive flora of the warmer, inland and less acid or even calcareous regions of the province, the regions of farms and apple and peach orchards, has come from the north, northwest or west by way of New Brunswick. This situation suggests the contrasts in the flora of Newfoundland elsewhere discussed,<sup>1</sup> where the cold, foggy and bleak acid southeastern region is distinguished by a flora derived from the acid sands and peats of the southern coastal plain; the warmer, sunny, calcareous western region by a calcicolous flora allied to those of the calcareous Arctic Archipelago and the Canadian Rocky Mountains.

*(To be continued.)*

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## OLD-TIME CONNECTICUT BOTANISTS AND THEIR HERBARIA,—II.

C. A. WEATHERBY.

*(Continued from p. 125.)*

BARRATT'S botanical activities began in England and extended, apparently, to about 1845. There is a specimen in his herbarium dated 1867, but most of his collecting was done before the former date. As a botanist, his impulse was toward research and original work. He was interested in the life history and morphology of plants. On a sheet preserved with one of his letters to Torrey are acute observations on such subjects as the bulblets of *Nymphoides* and their function and the germination of the seeds of *Orontium*. Groups which were taxonomically difficult or insufficiently studied attracted him. Of them he collected freely, to show their different forms, both for himself and abundant duplicates for his correspondents. "I constantly take in my carriage" he wrote to Torrey, "one or 2 large portfolios and collect through the season a great number of our finest and rarest plants." One hopes that no patient's colic had

<sup>1</sup> Fernald, *Am. Journ. Bot.* v. 237-247 (1918).

to wait when the good doctor spied a particularly fine and rare specimen by the roadside. He made the first and in some cases the only local collection yet known of certain of the rarer plants of Connecticut, such as *Carex trichocarpa*, *Draba caroliniana*, *Solidago canadensis*, *Gnaphalium purpureum* and *Aster radula*—the last at Guilford. But he seems to have missed entirely what we now know as the chief floristic features of his neighborhood—the isolated stations for *Arenaria groenlandica*, var. *glabra*<sup>1</sup> on the hills south of Middletown and for *Carex subulata* in the sand-plains to the north.

At different times he collected and studied especially *Cardamine pennsylvanica*, *Acer*, various species of *Aster* and *Solidago*, *Verbena*, *Lespedeza* and *Desmodium*, the group of *Eupatorium purpureum* and, most notably, *Carex* and *Salix*. On the last genus his most considerable botanical work was done. He studied it as opportunity offered, for ten years, growing willows in the gardens of obliging friends, watching them in the wild and making many and complete specimens in flower, fruit and leaf. By 1834 he had in manuscript and read before the New York Lyceum a "monograph of North American willows" which he planned to publish with drawings of all the species. Lack of the necessary funds prevented this project from being carried out—a state of things still not unfamiliar to scientists. Even so, his work attracted the attention of Sir William Hooker, then engaged in preparing his *Flora of British North America*, and, we may well believe, puzzled by the complex forms which even his comparatively small collection of willows presented. He sent to Barratt all his North American specimens to be named and invited him to contribute the treatment of the genus to his flora. This Barratt declined to do in detail, but he did present a synopsis of sections which Hooker used and notes on the species from which Hooker published three new species and two varieties ascribed to Barratt as author. Later, in 1840, Barratt himself published a title page and set of printed labels with introduction and notes intended to go with bound volumes of exsiccatae such as were fashionable in those days. The specimens which were to accompany them were, with one exception, all of his own collecting and from the vicinity of Middletown.

Since all of Barratt's publications are rare, a somewhat detailed

<sup>1</sup> The earliest known collection of this is by Merrill Hitchcock, May 4, 1878, 25 days before that of H. L. Osborn cited in the *Catalogue of Connecticut Plants*.

account of them may not be out of place. Among the willows, he recognizes 29 species (fourteen or fifteen more than current manuals admit in his region), four of them indicated as new though only three are properly published, and fourteen varieties, two unnamed, eleven with *nomina nuda* and one with a brief description. This one, *Salix tristis*, var. *monadelphica*, is an apparently teratological form in which the filaments are united, as they normally are in *S. purpurea*. Barratt distributed his 29 species among eight sections, using as diagnostic characters the time of appearance of the aments, whether before or after the leaves, the point on the ament, apex, middle, or base, at which the staminate flowers first appear, shape of leaves and type of pubescence on them, color of scales, etc. A vast deal of patient labor and observation went into this work and though the sections are in some cases separated by what are now regarded as no more than specific differences and some of the species are either hybrids or divided by finer lines than later students have been able to draw, yet the grouping is essentially that now in use in our current manuals.

Barratt issued similar exsiccatae sets with printed title-page and label-sheets, of the local Carices and Eupatoriums of the *E. purpureum* group. The former contains 67 species, mostly recognized now, and some dozen varieties, only two of which, *C. vulpinoidea*, vars. *glomerata* and *ambigua*,<sup>1</sup> are described. Some of the varietal *nomina nuda* are applied to segregates now recognized—the plants, for instance, now known as *Carex virescens*, var. *Swanii* and *C. vesicaria*, var. *jejuna*. Others seem to be based on wholly trivial and superficial characters. A case in point is that of *C. squarrosa* and *C. typhina*, related species which grow together in the flood-plain of the Connecticut River. Barratt entirely overlooked, or thought of no account, the characters of leaves, scales, form of spike and achene by which they are separated, lumped both together under one species and divided the aggregate into five unnamed varieties based entirely on the number of fruiting spikes.

In his work on the Eupatoria, he anticipates our latest treatment by dividing the group of *E. purpureum* into four species, one new—to which he adds three varieties. The new species, *E. fistulosum*, is

<sup>1</sup> The former is a state of *C. vulpinoidea* with short, thick inflorescence; the latter is, of course, *C. setacea*, var. *ambigua* of Gray's Manual, *C. xanthocarpa* and *C. annectens* of Bicknell.

separated on the basis of its glaucous, hollow stems, which he says, the workmen in the brownstone quarries were wont to fill with powder and use as fuses. The two recent attempts to unravel the synonymy of this group agree that Barratt was here redescribing a Linnaean species;<sup>1</sup> but, as they flatly disagree as to what Linnaean species, Barratt's name may yet bring peace by taking possession of the field. In the other species recognized, the stem is described as solid and glabrous in *E. purpureum*, hispid or pubescent and glandular in *E. maculatum* and *E. ternifolium*.

Barratt planned other, more pretentious botanical works—the monograph of willows already mentioned and a local flora of Middletown which should be “creditable to this place and myself.” How far the latter may have proceeded in manuscript there is now no means of telling: local botanists may well be sorry it was never brought to completion. For some reason Barratt never got anything into Silliman's Journal; and the three sets of exsiccatae label-sheets, with their accompanying notes, and a brief article on White Mountain plants collected by one of his pupils, E. W. Southwick, in 1841, make up the sum of his published botanical work.

Barratt's herbarium is preserved at Wesleyan University. Like so much of his work, it is a thing half-finished. Not more than half of his American plants and none of his European ones are mounted; numerous duplicates were left to lie precariously in folders with loose labels. The collection was no doubt neglected in Barratt's later years, and for a long time the University was not in a position to give it needed attention. The herbarium beetle is ubiquitous and not in the habit of letting opportunity knock in vain. So it has happened that the greater part of Barratt's flowering material of the willows and a good many specimens in *Compositae* and other groups which appeal to larval appetites are utterly ruined, and others damaged. There remain, however, somewhat less than 10,000 sheets which, in spite of everything, still constitute a valuable collection, not altogether unworthy of the pride which Barratt once took in it. For that time, the specimens are unusually ample. One very tall plant of *Solidago altissima* is cut into sections and mounted on a series of sheets duly indicated—a method with which few contemporary botanists would have troubled themselves. The specimens are carefully

<sup>1</sup> See RHODORA, xxii. 57ff. and 157ff.

made and mounted, when at all, with equal care—attached with glue in the modern way to paper corresponding to the ledger paper of today in sheets cut  $10\frac{3}{4}$  by  $15\frac{1}{4}$  inches. Barratt was particular about this paper and speaks of having it made to order for him. Like most botanists of his time, he was not so particular about data. However, a good proportion of his plants are fully labelled with date and place of collection and collector's name. Others have a place without a date or a date without a place, and too many only the name of the plant and some references to literature. But in respect to data his herbarium is a model compared to that of Brace.<sup>1</sup> There are specimens from many American botanists of the period. S. B. Buckley, once his pupil, sent him numerous plants from the central and southern United States, in particular a fine set of southern *Rynchospora*. There is original material of *Cyperus diandrus* from Torrey, *Euphorbia Darlingtonii* from Darlington and *Carex Barrattii* from Knieskern. There are a number of duplicates of Hooker's willows from the collections of Drummond in the Rocky Mountains and of Richardson and Morison in arctic North America. Chapman, Le Conte, Sartwell, Boykin, Short, J. Hale, Schweinitz, Dewey, Carey, Sullivant, Lapham, Boott and Oakes are among the names which appear on his labels. From Europe he has plants from H. Shepard of the Liverpool Botanic Garden, John Ball, J. S. Henslow, De Candolle, Jacquin, etc. Of his own collecting there are a good many plants from near Philipstown, a few from the White Mountains and central New York and a representation of the local flora about Middletown which is very fair throughout and excellent in the groups which he especially studied. With some assistance from later collections it would still serve as a good basis for a catalogue of the local plants.

I am indebted for generous aid in the preparation of this paper to Miss Laura Philbrook, formerly of the Middletown Public Library; Professor William North Rice of Wesleyan University; Dr. John Hendley Earnhart of the New York Botanical Garden; and especially to Mr. John H. Sage of Portland, Conn., without whose interest and co-operation I could hardly have secured many needed facts, and Mr. C. H. Bissell of Southington, Conn., who first suggested the writing of such a paper and who had so large a part in the preliminary work

<sup>1</sup> See RHODORA, xvi. 83ff.

on it that, except for its phrasing and its faults, he is as much its author as I.

The following lists may perhaps be of service.

## I

Species and varieties published by Barratt, or by others from his notes and over his name, of which there is original material in his herbarium.

*Carex vulpinoidea*, var. *ambigua*, Suppl. N. Am. Carices, no. 62 (1841).

*Carex vulpinoidea*, var. *glomerata*, l. c. no. 61 (1841).

*Eupatorium fistulosum*, *Eupatoria Verticillata* no. 1 (1841).

*Salix balsamifera* in Anderss. Oefvers. Vet. Akad. Foerhandl. xv. 125 (1858) (a single leaf only).

*Salix crassa*, Sal. Am. no. 7 (1840).

*Salix Drummondiana* in Hook. Fl. Bor. Am. ii. 144 (1840).

*Salix pameachiana*, Sal. Am. no. 16 (1840).

*Salix Scouleriana* in Hook. Fl. Bor. Am. ii. 144 (1840) (probably this species, though labelled by mistake *S. Hookeriana*).

*Salix Torreyana*, Sal. Am. no. 29 (1840).

*Salix tristis*, var. *monadelphia*, l. c. no. 2.

Other material of Barratt's willows may be found in the Torrey Herbarium at the New York Botanical Garden, and the Gray Herbarium and, no doubt, at Kew. The identity of most of his species not already well understood has been worked out by Mr. Camillo Schneider in his recent series of notes on North American Willows in the Botanical Gazette and the Journal of the Arnold Arboretum.

## II

Barratt's publications, so far as known to me, exclusive of letters and other articles in newspapers, of which there are a considerable number in the one complete file extant of the Middletown *Sentinel and Witness*. All items here listed, except as otherwise noted, were published at Middletown and bear the imprint of C. H. Pelton. Nos. 2, 3, 4, and 5 are label-sheets, printed on one side of the paper only. An official acknowledgment from the Linnaean Society of London of a gift of pamphlets, etc., from Barratt, dated March 5, 1842, mentions another publication which I have not seen—"Remarks on the Canker Worm Moth."

1. Plan of Main St., Middletown, showing the buildings and occupants, from about 1770 to 1775. In J. W. Barber, Connecti-

- cut Historical Collections, 508. New Haven and Hartford. 1868.
2. *Salices Americanae*. North American Willows Disposed in Sections or Natural Groups. 1840. 8pp. qto.
  3. North American *Carices*. 1840. 4 octavo pages.
  4. Supplement to the North American *Carices*. 1841. 1 8vo page.
  5. *Eupatoria Verticillata*: specimens to illustrate the North American verticillate species and varieties of the genus *Eupatorium*. 1841. 1 folio page.
  6. List of Plants collected by Mr. E. W. Southwick on the White Mountains of New Hampshire, July 15, 1841. *The Classic* ii. 182–185. 1842. Also reprinted, with changed pagination, together with Southwick's Notes of a Tour to the White Hills of N. H., to which it is in the nature of an appendix.
  7. Table to show the period and continuance of Flowering of the Apricot, Peach, Cherry and Apple at Middletown, Connecticut. . . . Ann. Report of the Regents of the University of the State of New York lviii. 218–129. 1845.
  8. Report on the Season of 1846. 1846. 14 pp. Gives tables of the time of flowering of fruit trees from 1837 to 1846 and of dates of late spring and early fall frosts, etc.
  9. Key to the Indian Language of New England in the Etchemin or Passamaquoddy Language. . . derived and written from the Indian Nicola Tenesles. 1850. 8pp.
  10. Indian Proprietors of Mattabeseck and their descendants whose names appear in the town Records from 1673 to 1749. In Addresses delivered at the Dedication of the Indian Hill Cemetery, 47–50, Middletown, 1850. Reprinted in *Indian Hill Cemetery: By laws, Regulations, etc.* 1873.
  11. The Indian of New England and the northeastern Provinces . . . . . derived from Nicola Tenesles. 1851. 24pp.
  12. *Fossil Wonders of a former World*. 1874. 7pp.

EAST HARTFORD, CONNECTICUT.

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## NOTES ON RHODODENDRON.

W. W. ASHE.

*RHODODENDRON CAROLINIANUM margarettae* n. var. A-shrub in habit resembling the type.<sup>1</sup> Flowers pure white, except for pale yellow spots on the upper lobe of corolla and anthers, appearing be-

<sup>1</sup> *Rhod.* 14: 97 (1912).